

Chapter 6.2 WATER POLLUTION CONTROL PROGRAMS

Virginia Pollutant Discharge Elimination System (VPDES)

The Commonwealth of Virginia has operated a successful state discharge permit program since 1946. The Federal Water Pollution Act was passed requiring a uniform permit program nationwide, allowing all states to uniformly control industrial and municipal wastewater discharges. Some states elected to have the federal government manage their permit program. Virginia requested delegation of authority from EPA to administer its own permit program in conformance with VPDES (formally NPDES) regulations. In April 1975, Virginia was delegated the authority to administer the VPDES permit program. The VPDES Permit Regulation, 9 VAC 25-31-10 et seq., establishes the procedures and requirements for this Program.

VPDES permits establish limits on the quantity and/or concentration of pollutants allowed in the discharge. The VPDES permits implement the applicable requirements of federal effluent guidelines, as well as the Virginia Water Quality Standards. Effluent limits are written to ensure that the most appropriate of these regulations is applied to the discharge. The permittee must monitor the quality of the effluent and report the results to DEQ. The permit also requires the facility to be properly operated and maintained.

Permits may also contain additional requirements detailed as “Special Conditions” in the permit. Examples of these special conditions are:

1. Pretreatment programs for publicly owned treatment works (POTW's) – Requirements for the POTW to have the ability to control the discharges from contributing industries.
2. Storm water pollution prevention
3. Toxics Management Program – this program requires the permittee to perform aquatic toxicity testing on the discharged effluent to determine reasonable potential for toxicity.
4. Land Application of Sewage Sludge

DEQ is utilizing the concept of general permits to streamline the permitting process and conserve resources of both the permittee and DEQ.

Municipal Facilities

There are approximately 700 Municipal discharges currently permitted in Virginia. The term municipal generally refers to facilities that treat predominantly domestic sewage and such facilities may be either publicly or privately owned. There are approximately 600 “minor” municipal dischargers ranging in size from > 1,000 gallons per day and < 1 million gallons per day and there are approximately 100 “major” municipal discharges, discharging at least one million gallons per day (mgd). Major facilities range in size from one to 70 mgd and treat about 90 percent of all the sewage in Virginia.

Industrial Facilities

There are approximately 500 Industrial discharges currently permitted in Virginia. The industrial category of discharge generally refers to the discharge of wastewaters generated by industrial activities such as factories, power plants and other industrial activities. Of these, about 50 are major facilities. Industrial facilities are assigned major and minor status through an agreement between EPA and the DEQ.

General Permits

General permits are written for a general class of discharge with similar effluent characteristics. Virginia was granted general permit authority from EPA in May 1991. General permits have streamlined the VPDES permit process, and reduced the paperwork, time and expense of obtaining a permit, and

allow staff resources to be concentrated on individual permits. General permits are promulgated as regulations and require application for coverage through the submittal of a Registration Statement. The following general VPDES permits are available in Virginia; Petroleum Contaminated Discharges, Confined Animal Feeding Operations, three different Storm Water general permits, Nonmetallic Mineral Mining, Domestic Sewage Discharges # 1,000 gallons per day, Non-Contact Cooling Water, Seafood Operations, Car Wash Discharges, and Ready Mix Concrete Operations.

There are over 4,000 discharges covered by the general permits in force in Virginia. A large majority of these are for coverage under one of two Storm Water General Permits, which regulate the control of storm water run-off from both selected industrial sites and from construction sites impacting more than one acre of land.

Virginia regulates municipal storm sewer systems (MS4) through both individual VPDES MS4 permits and a general MS4 permit. Individual MS4 permits are issued to the 11 cities and counties in Virginia with a population in excess of 100,000. Other municipalities and public entities in designated urbanized areas may be subject to permitting under Virginia's general MS4 storm water permit.

Fees For Permits and Certificates

The DEQ has adopted Regulation 9VAC 25-20-10 et seq. which establishes fee schedules for Permits. The establishment of a fee assessment and collection system is a requirement of Section 62.1-44.15:6 of Article 2.1 of the State Water Control Law enacted by the 1992 General Assembly. The assessment of fees allows DGIF, DCR, and DEQ to recover a portion of the cost of processing applications for permits or Certificates, which DEQ has the authority to issue. In its 2002 session, the General Assembly of Virginia amended and enacted revisions to Section 62.1-44.15:6 of the Code of Virginia increasing the maximum amounts for processing each type of permit/certificate category. Pursuant to the legislative amendment, 9 VAC 25-20-10 et seq. was modified to raise the allowable fees for permits and certificates effective July 1, 2002. However, under current law, the fees revert to their pre-July 1, 2002 levels on July 1, 2004. In 2003, DEQ established a committee of stakeholders to review the current fee structure and develop recommendations to institute a new approach to assessing fees for permits and certificates issued by the Agency.

Fees have been established for VPDES, Virginia Pollution Abatement (VPA), Virginia Water Protection (VWP), Corrective Action Plan (CAP), Surface and Ground Water Withdrawals, and General Permits. Agricultural operations are exempt from payment of permit application fees. Fees may range from \$600 for a general permit to \$24,000 for a VPDES "Industrial Major" permit. There are also fees for modifications and waivers.

Toxics Management Program

Requirements for toxics monitoring are written into VPDES permits as special conditions. These monitoring requirements are developed by the DEQ Toxics Management Program (TMP), which originated in the early 1980's. The aim of the program is to involve all industrial and municipal VPDES permit holders that potentially discharge toxic pollutants into a systematic program of biological testing. This testing is designed to identify wastewater discharges that are toxic to aquatic life.

The need for a TMP is determined at the time of permit issuance, reissuance, or modification, using information provided by the permittee as part of the VPDES permit application, as well as additional data generated by the DEQ or other sources. Generally TMP special conditions include quarterly chronic and/or acute toxicity testing for a period of one-year using vertebrate and invertebrate species. Once the TMP data have been generated for a particular outfall, they are evaluated for reasonable potential. If the data do not show reasonable potential for toxicity, the permittee may continue biological testing at a much-reduced frequency. However, if the data show reasonable potential, a WET (Whole Effluent Toxicity) limit is developed and put into the permit with a compliance schedule.

Pretreatment Program

Virginia's Pretreatment Program controls industrial discharges to POTW's. These municipal sewage treatment plants are usually not designed to treat toxic industrial wastes. Such wastes may interfere with the plant's biological treatment processes, pass through untreated into receiving waters, or contaminate POTW sludge to the extent that lawful disposal is precluded. The control authorities for the POTW's are charged with the responsibility of controlling their industrial users. EPA delegated oversight and regulation of the POTW pretreatment programs to the DEQ on April 14, 1989.

Standards imposed on industrial users include general standards, prohibitive discharge standards, categorical standards, and local limits developed by POTWs. General standards are narrative prohibitions against pass-through and interference, applicable to all industrial users. Prohibitive discharge standards are also applicable to all industrial users and include limitations on parameters such as pH and temperature, measured in industrial discharges. Categorical standards are federal technology-based standards developed for certain categories of industries discharging to POTWs. In addition, POTWs are required to develop local limits for substances that have the potential to cause interference with treatment or pass through in toxic amounts to receiving waters.

Pretreatment facilities are controlled through municipal ordinances, and are required to self-monitor and report biennially to the municipality, which then reports to DEQ.

The Virginia Compliance Auditing System

The DEQ monitors the performance of municipal and industrial dischargers through a computerized compliance auditing system. Under the VPDES permit program, major facilities are required to submit monthly plant performance reports based upon self-monitoring of the parameters listed in the discharge permit. Minor facilities report on an individually assigned frequency. These discharge-monitoring reports (DMRs) indicate the quality of plant effluent and whether any bypasses have occurred. Data from DMRs are entered into the DEQ's Comprehensive Environmental Database (CEDS) in the regional offices, which compares all parameters to permit limits or other permit conditions, or other orders to detect any violations.

When a permit or other enforcement action violation is observed through the CEDS, the system assesses weighting points according to the severity and frequency of the violation. In addition to the automatic detection of effluent violations through CEDS, compliance schedules, both in permits and enforcement actions as well as other required due dates, are tracked through CEDS. Weighting points are also assigned for single event violations reported to the DEQ by permittees, the public or other sources. All weighting point values are assessed and tallied for the previous six reporting periods. When accumulated values exceed specified limits, enforcement action may be initiated any time a violation is observed which is determined to cause environmental harm. Additional enforcement activity may result from problems discovered during on-site inspections.

The accumulated records of weighting point values are used as a tool to aid objective focus when determining appropriate enforcement activity. The program also ensures that permittees are fully aware of problems as they develop and have an opportunity to improve treatment in order to maintain compliance.

Virginia Pollution Abatement Permits

A Virginia Pollution Abatement (VPA) Permit may be issued by the DEQ whenever an owner handles wastes or wastewater in a manner that does not involve discharging to a sewage treatment facility or to state waters pursuant to a valid VPDES permit. The Virginia Pollution Abatement Permit Regulation (9 VAC 25-32-10 et. seq.) was adopted in 1996. Pollution abatement facilities approved through the VPA permit program may include pits, ponds, and lagoons for waste storage, treatment, or recycling. Permits are also required for on-site facilities, such as land treatment systems. The basis for approval for such systems includes assurance that waste or wastewater will not discharge directly into state surface waters except under prescribed extreme rainfall conditions, and for protection of ground water quality.

To address and gauge compliance with the state's groundwater standards, whenever pits, ponds, lagoons, and/or land treatment is part of a proposed or VPA permitted facility, a ground water

monitoring program may be required as part of or prior to receiving approval for a VPA permit. Land application is a no-discharge alternative to conventional discharging systems. Land treatment is frequently a cost-effective alternative to direct discharge to surface waters, and can be a technically sound means of waste or wastewater utilization.

Concentrated Confined Animal Feeding Operations

Concentrated animal feeding operations (CAFOs) are currently regulated under Virginia State Law and constitute a large component of the VPA program. CAFOs include dairy, beef, swine, and poultry operations in Virginia. In 2003, EPA published a federal rule requiring CAFOs with over specified number of animals to be permitted under the federal NPDES program. As of this report, Virginia is amending current regulations and developing a new VPDES general permit to address the federal rule. It is anticipated that the new general permit will cover those CAFOs subject to VPDES regulation. However, those not affected by the federal rule but which are currently regulated under the VPA program, will continue to be permitted by either individual VPA permits or covered by one of the existing VPA general permits for such facilities.

Water Quality Planning

DEQ uses Water Quality Management Plans (WQMPs), required by section 303(e) of the Clean Water Act, as the link between the water quality assessment required for this report and water quality based controls. These plans recommend control measures for the water quality problems identified and characterized in the 305(b) report. Control measures recommended in the plans are implemented through the VPDES permit system for point sources and through the application of Best Management Practices (BMPs) for nonpoint sources. WQMPs establish the strategy for returning impaired waters to meet water quality standards and for preventing the degradation of high quality waters.

Waterbodies are classified as effluent limited (E.L.) where water is known to meet state water quality standards after the application of technology-based effluent limits or other required controls. Waterbodies not meeting existing water quality standards after the application of technology-based effluent limits or controls are classified as water quality limited (W.Q.L.).

The DEQ uses the WQMPs to implement the total maximum daily load (TMDL) process required by Section 303(d) of the Clean Water Act. TMDLs are the allowable loadings or loading strategies for waterbodies classified as water quality limited. The TMDL process is a mechanism for integrating the point and nonpoint source loads contributing to the impairment of the waterbody. Only by controlling both sources of pollutants, can water quality be restored to the affected waterbodies.

Watershed Programs (TMDLs) and Federal Grants Utilization

Statutory and Regulatory Framework: §303(d) of the 1972 Clean Water Act requires the states to identify waters not in compliance with water quality standards, establish priorities, develop a biennial list of the impaired waters, and develop Total Maximum Daily Loads (TMDLs) for the waters on the §303(d) list. In July 1992, EPA promulgated regulations, 40 CFR §130.7, for §303(d) of the CWA. TMDLs were to be implemented through existing pollution reduction regulations and voluntary strategies.

In 1997, the Virginia General Assembly enacted the Water Quality Monitoring, Information, and Restoration Act, §62.1-44.19:4 through 19:8 of the Code of Virginia. This statute directs DEQ to develop a list of impaired waters and develop TMDLs for these waters. Also, the state statute directs DEQ to develop implementation plans for the TMDLs.

The State Water Control Law, Chapter 3.1, Article 1 of the Code of Virginia, authorizes the State Water Control Board to control and plan for the reduction of pollutants impacting the chemical and biological quality of the state's waters that result in the degradation of the waters designated uses.

Beginning in 1998, Virginia and other States were required to prepare plans for restoring the quality of polluted waters on the 303(d) list of impaired waters. These restoration plans are called TMDLs. A TMDL Report is a special study to determine the amount of a pollutant that the impaired water

can assimilate and still meet water quality standards. Additionally, the TMDL report will identify all sources of pollution contributing to the violation of water quality standards and calculate the pollutant amount entering the stream from each source and calculate reductions in pollutant loads needed for attainment of Water Quality Standards.

For many years, DEQ's pollution reduction efforts were focused on the treated effluent discharged into Virginia's waters via the VPDES permit process. The TMDL process has expanded the focus of DEQ's pollution reduction efforts from the effluent of wastewater treatment plants to the pollutants causing impairments of the streams, lakes, and estuaries. Also, the reduction tools are being expanded from the permit process to include a variety of voluntary strategies and BMPs.

TMDL Schedule

In 1998, the American Canoe Association and the American Littoral Society filed a complaint against EPA for failure to comply with the provisions of §303(d) of the CWA in Virginia. In 1999, EPA signed a Consent Decree with the plaintiffs. The Consent Decree contained a TMDL development schedule through year 2010. This schedule requires a TMDL to be developed on the 410 impaired waters and the 260 condemned or restricted shellfish waters identified in Virginia's 1998 303(d) list. Many of these impaired waters are impaired by more than one pollutant.

<u>TMDLs - 410</u>	<u>Shellfish TMDLs - 260</u>
1999	1
2000	12
2002	30
2004	83
2006	91
2008	96
2010	97
TOTAL 410	plus 260

In all, forty-nine (49) TMDLs have been developed and approved by EPA during this assessment period. See the TMDL Status Report, draft and final TMDL Reports at: <http://www.deq.state.va.us/tmdl/>.

TMDL Resources

DEQ assisted by DCR and DMME have met the requirements of the Consent Decree through resources provided by EPA grant funds {106, 104(b)(3), 604(b) and 319}. These dollars support Staff needed to provide technical oversight and administration of the program and Contractual Services to assemble and analyze the tremendous amounts of data needed in the development of TMDLs.

Table 6.2-1 summarizes Federal Grant funds supporting TMDL development in Virginia for the period January 1, 1998 through December 31, 2002.

Table 6.2-1 Summary of Watershed Program Grant Funds

Year	604(b)	104(b)(3)	106	319 NPS	Yr. Total
1999	\$220,000	\$100,000	-0-	-0-	\$320,000
2000	\$220,000	\$ 88,500	-0-	-0-	\$308,500
2001	\$163,312	\$120,250	\$1,010,677	\$500,000	\$1,794,239
2002	\$220,000	\$110,000	\$1,010,677	\$973,198	\$2,313,875
<u>Totals</u>	\$823,312	\$418,750	\$2,021,354	\$1,473,198	\$4,736,614